

WHAT IS CLAIMED IS:

1. A hydrostatic vehicle driving system applicable to a working vehicle, comprising:

- an engine;
- a hydraulic pump driven by said engine;
- a variable displacement hydraulic motor;
- a hydraulic circuit for fluidly connecting said hydraulic pump and said hydraulic motor with each other;
- an axle driven by said hydraulic motor; and
- a motor capacity control system controlling capacity of said hydraulic motor in correspondence to the condition of load on said engine.

2. The hydrostatic vehicle driving system as set forth in claim 1, further comprising:

- a housing containing said hydraulic pump, said hydraulic motor and said axle.

3. The hydrostatic vehicle driving system as set forth in claim 1, said motor capacity control system comprising:

- load-detection means detecting hydraulic pressure in said hydraulic circuit corresponding to the load on said engine;
- a hydraulic actuator for changing the capacity of said hydraulic motor; and
- actuator-control means controlling said hydraulic actuator according to the hydraulic pressure detected by said load-detection means.

4. The hydrostatic vehicle driving system as set forth in claim 1, further comprising:

a manual mode selection member provided on said working vehicle so as to be switched between a first mode position and a second mode position,

wherein, when said mode selection member is located at said first mode position, capacity of said hydraulic motor is fixed, and

wherein, when said mode selection member is located at said second mode position, capacity of said hydraulic motor can be varied by said motor capacity control system.

5. The hydrostatic vehicle driving system as set forth in claim 4, said hydraulic pump being a variable displacement hydraulic pump, further comprising:

a manual speed control member provided on said working vehicle for changing capacity of said hydraulic pump,

wherein the capacity of said hydraulic pump is controlled by operation of said speed control member whether said mode selection member is located at said first mode position or said second mode position.

6. The hydrostatic vehicle driving system as set forth in claim 5, wherein said speed control member is selectively connected to a carburetor of said engine so that, when said mode selection member is located at said second mode position, said speed control member is operated so as to control both capacity of said hydraulic pump and output rotary speed of said engine.

7. The hydrostatic vehicle driving system as set forth in claim 1, said hydraulic motor being of an axial piston type, further comprising:

a movable motor swash plate of said hydraulic motor, said motor swash plate having a contact surface abutting against a piston of said hydraulic motor;

a phantom plane in perpendicular to a rotary axis of said hydraulic motor;

a first angle between said contact surface of said motor swash plate and said phantom plane, and

a second angle between said contact surface of said motor swash plate and said phantom plane, said second angle being greater than said first angle, wherein said motor capacity control system moves said motor swash plate from said first angle to said second angle according to increase of load on said engine.

8. A hydrostatic vehicle driving system applicable to a working vehicle, comprising:

an engine;

a variable displacement hydraulic pump driven by said engine;

a hydraulic motor;

a first hydraulic circuit for driving said hydraulic motor interposed between said hydraulic pump and said hydraulic motor;

an axle driven by said hydraulic motor;

a manual speed control member provided on said working vehicle for changing capacity of said hydraulic pump;

an actuator for changing capacity of said hydraulic pump, said actuator being controlled according to output of said engine, and

selection means selecting one of said manual speed control member and said actuator so as to change the capacity of said hydraulic pump.

9. The hydrostatic vehicle driving system as set forth in claim 8, further comprising:

- a charge pump driven by said engine for supplying said first hydraulic circuit with fluid;

- a second hydraulic circuit extended from a discharge port of said charge pump;

- an orifice provided on the way of said second hydraulic circuit, wherein said actuator is driven according to difference of hydraulic pressure in said second hydraulic circuit between upstream and downstream of said orifice.

10. The hydrostatic vehicle driving system as set forth in claim 8, further comprising:

- a manual accelerator member provided on said working vehicle for adjusting the throttle of a carburetor of said engine, wherein, when said selection means selects said actuator, capacity of said hydraulic pump is varied according to operation of said accelerator member.

11. A hydrostatic vehicle driving system applicable to a working vehicle, comprising:

- an engine;

- a variable displacement hydraulic pump driven by said engine;

- a variable displacement hydraulic motor;

- a first hydraulic circuit for driving said hydraulic motor interposed between said hydraulic pump and said hydraulic motor;

- an axle driven by said hydraulic motor;

- a manual speed control member provided on said working vehicle for changing capacity of said hydraulic pump;

- an actuator for changing capacity of said hydraulic pump, said actuator being controlled according to output of said engine;

selection means selecting one of said manual speed control member and said actuator so as to change the capacity of said hydraulic pump;

wherein, while said selection means selects said speed control member, capacity of said hydraulic motor is fixed, and

wherein, while said selection means selects said actuator, capacity of said hydraulic motor can be changed.